

REMARKS

The Office Action mailed July 8, 2002, has been received and reviewed. Claims 1-24 are pending and stand rejected. Claims 1 and 13 have been amended as set forth herein and claim 24 has been cancelled. The specification is to be amended as previously set forth. All amendments, including the cancellation of claim 24, are made without prejudice or disclaimer.

Applicant respectfully requests that the claims be considered in view of the amendments and remarks presented herein. In view of the arguments made hereinafter, the applicant contends that claims 1-23 are in condition for allowance and the same is respectfully requested.

A. Specification

It was noted by the Examiner that the present application did not follow the preferred layout for patent applications and that the abstract was not written in a single paragraph. Attached hereto is a substitute specification in accordance with the suggestions of the examiner.

B. Rejections of Claims 1-24 Under 35 U.S.C. § 112, Second Paragraph

Claims 1-24 stand rejected under 35 U.S.C. § 112, first paragraph, as assertedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claim 1 was rejected because the examiner indicated that it was not clear what is encompassed by polyolefin-based and vinyl-polymer based. Claim 1 was further rejected as it was assertedly unclear whether the phrase "vinyl-based" means that if the material is chlorinated, whether the material is acrylic or polypropylene. Although not specifically rejected, claim 13 contains language similar to that of claim 1. Accordingly, claim 13 has been amended in a manner similar to claim 1.

Applicant has amended claims 1 and 13 to remove the terms "polyolefin-based" and "vinyl-polymer based" and to recite in part "materials comprising polyolefin and materials comprising vinyl-polymer" for clarification. As known by those of ordinary skill in the art, "polyolefin" refers to any polymeric plastic material obtained by the polymerization of olefins and "vinyl-polymer" refers to any polymeric plastic material obtained by the polymerization of

the monomer $\text{H}_2\text{C}=\text{CHX}$, wherein X can be a general substituent. Further, applicant submits that vinyl-based does not mean that the material is chlorinated.

In claims 4 and 16, the examiner asserted that it is not clear what is meant by “apparent density.” Applicant respectfully submits that “apparent density” refers to the density of the granular material as used in the infill, wherein the density is 600-700 grams/liter. (*See, Specification* as filed, page 5, lines 22-30). The apparent density of the granular material in the infill differs from the density of the granular material by itself, *i.e.*, not in the infill, which is 1.5-1.6 grams/cm³. (*See, Id.* at lines 8-12).

Claim 24 was rejected as assertedly being directed to the use of a particulate material and not setting forth any steps. Claim 24 was further rejected under 35 U.S.C. § 101 as assertedly resulting in an improper definition of a process. Claim 24 has been cancelled rendering the rejections thereof moot.

In view of the amendments and foregoing remarks, reconsideration and withdrawal of the Section 112 rejections are respectfully requested.

C. 35 U.S.C. § 103

Claims 1-24 stand rejected under 35 U.S.C. 103 over Prevost. Applicant submits that the Prevost reference does not render independent claims 1 or 13 obvious. Claims 1 and 13 require particulate infill consisting of a substantially homogeneous mass of a granular material chosen from the group consisting of materials comprising polyolefin and materials comprising vinyl-polymer. Thus, claims 1 and 13 require chemically homogeneous compositions that inherently possess homogenous physical characteristics.

The Office Action indicated that the omission of an element and its function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. (*See, Office Action*, page 5). However, applicant submits that “the omission of an element and retention of its function in an indicia of unobviousness.” (*M.P.E.P.* § 2144.04, *citing In re Edge*, 359 F.2d 896, 149 USPZ 556 (CCPA)).

For instance, since the particulate material disclosed in Prevost has sand which possesses a number of drawbacks, *i.e.*, the marked tendency to injure a player or an athlete and becoming

compacted making the particulate material hard (*See generally*, U.S. Pat. 6,338,885, Col 1 line 36-Col. 2, line 19, *See also*, Specification as filed, page 2, lines 19-24), the present invention overcomes these drawbacks by omitting the sand and retaining the function.

Applicant further submits that a *prima facie* case of obviousness has not been established with regard to independent claims 1 and 13 since Prevost does not teach or suggest each and every limitation of the claims. For instance, claims 1 and 13 require a particulate infill consisting of a substantially homogeneous mass of a granular material chosen from the group consisting of materials comprising polyolefin and materials comprising vinyl-polymer. Applicant submits that Prevost does not teach or suggest materials comprising polyolefin or materials comprising vinyl-polymer as presently claimed. Rather, Prevost is limited to ground crumb rubber, cork, styrene, epdm rubber, neoprene or similar materials.

Applicant further submits that Prevost does not teach or suggest a substantially homogenous mass of granular material as presently claimed. Prevost suggests dividing the layer of particulate material "in sub-layers with the lower sub-layer 17 adjacent the backing member 3, as shown in FIG. 2, having smaller particles and the upper sub-layer 19 having larger particles to initiate good drainage [wherein] the particles in the lower sub-layer 17 could be mainly sand with a mesh size of about forty to seventy mesh [while] the upper sub-layer 19 would comprise larger particles of sand combined with the rubber particles." (U.S. Pat. 6,338,885, Col. 8, lines 4-11).

Thus, the layered structure/mixture suggested in Prevost is intrinsically not homogeneous and comprises material with different characteristics in density and grain size than the present invention. Further, since synthetic grass structures are subject to heavy duty conditions with athletes running, jumping, speeding up, and falling thereon, a structure with an inhomogeneous in fill exhibits a non-uniform behavior in both the vertical direction of the in fill and the horizontal direction over the synthetic grass structure giving rise to adjacent areas of the synthetic turf having different characteristics and behavior. Since the present invention includes a chemically and physically homogeneous in fill material, the drawbacks of Prevost may be avoided.

Further, since particles of the in fill may float in water, Prevost suggests "the cryogenically ground rubber is less angular than non-cryogenically ground rubber and has less

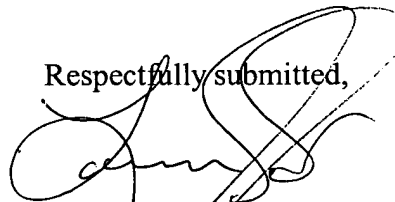
tendency to allow water, and microscopic air bubbles carried by water, to attach to it. Thus, there is less tendency for rubber particles to float upwardly when the surface is flooded.” (*Id.* at Col. 3, lines 60-65). The present invention avoids this drawback by using materials for the in fill which are different from those used by Prevost, *i.e.*, materials comprising polyolefin and materials comprising vinyl-polymer. Since the density of the materials utilized in the invention are higher than the density of water, *i.e.*, 1.5-1.6 g/cm³, and higher than the density of used tires, *i.e.*, the cryogenically ground crumb rubber of Prevost, it would not have been obvious to one of skill in the art to modify the teachings of Prevost to arrive at the claimed invention.

Accordingly, applicant respectfully requests reconsideration and withdrawal of the obviousness rejections of independent claims 1 and 13, and claims 2-12 and 14-24 depending therefrom.

CONCLUSION

In view of the foregoing amendments, and further in view of the arguments made herein, it is believed that this application is now in condition for allowance. Reconsideration and early Notice of Allowance is respectfully requested.

Respectfully submitted,



Laurence B. Bond
Registration No. 30,549
Attorney for Applicant(s)
TRASKBRITT
P.O. Box 2550
Salt Lake City, Utah 84110-2550
Telephone: 801-532-1922

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LBB/afn

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MARKED UP VERSION OF CLAIMS SHOWING CHANGES MADE

1. (Amended) A synthetic-grass cover structure comprising:

-a sheet substrate with a plurality of filiform formations that extend from the substrate to simulate natural grass cover; and

-a particulate filling material or infill dispersed between said filiform formations in such a way as to maintain the latter in a substantially upright condition,

wherein said particulate infill consists of a substantially homogeneous mass of a granular material chosen from the group consisting of [polyolefin-based] materials comprising polyolefin and [vinyl-polymer-based] materials comprising vinyl-polymer.

13. (Amended) A particulate filling material or infill for synthetic-grass covers, said infill being dispersible between the filiform formations simulating the grass cover in such a way as to maintain the filiform formations themselves in a substantially upright condition,

wherein said particulate infill consists of a substantially homogeneous mass of a granular material chosen from the group [made up] consisting of [polyolefin-based] materials comprising polyolefin and [vinyl-polymer based] materials comprising vinyl-polymer.

ABSTRACT OF THE DISCLOSURE

A synthetic-grass structure for laying on a subfloor comprises[: -] a sheet substrate with a plurality of filiform formations extending upwards from the substrate to simulate natural grass cover[;] and [-] a particulate filling material or infill dispersed between the filiform formations in such a way as to maintain the filiform formations in a substantially upright condition. The infill [consists of] includes a substantially homogeneous mass of a granular material [chosen in the group made up of] selected from polyolefin-based materials and vinyl-polymer-based materials, preferably recycled ones.

[(Single figure)]